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T O P S E C R E T 242323Z CITE [redacted] 0500 1967 APR 24 23 43Z 25X1

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CORONA/PET

SUBJ: MISSION 1040 PHOTOGRAPHIC EVALUATION INTERIM REPORT (PEIR)

[redacted] 25X1

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1. NUMERICAL SUMMARY

MSN NO AND DATES: 1040-1, 30 MARCH - 4 APRIL 1967

1040-2, 4-8 APRIL 1967

LAUNCH DATE AND TIME: 30 MARCH 1967/1854Z

VEHICLE NUMBER: 1636

CAMERA SYSTEM: J-35

PAN CAMERA NO: FWD-LOOKING 197

AFT-LOOKING 196

MSN 1040-1 S/I NO: D78/95/96

MSN 1040-2 S/I NO: D92/79/110

2. CAMERA SETTINGS

FWD-LOOKING 0.225 INCH SLIT WRATTEN 23A FILTER

AFT-LOOKING 0.175 INCH SLIT WRATTEN 21 FILTER

3. PERFORMANCE SUMMARY

THE OVERALL IMAGE QUALITY OF MISSION 1040-1 AND -2 IS BETTER THAN MISSION 1038 AND COMPARABLE TO MISSION 1039. THE AFT-LOOKING (MASTER CAMERA) IMAGERY IS GENERALLY SLIGHTLY

TOP SECRET

25X1 Excluded from automatic downgrading and declassification

BETTER THAN THE FWD-LOOKING IMAGERY. ANALYSIS OF THE INDEX CAMERA PHOTOGRAPHY SHOWED GENERALLY CLEARER WEATHER CONDITIONS FOR MISSION 1040 THAN EXISTED FOR 1038 AND 1039 (SEE SECTION 6.B).

4. ANOMALIES

ANOMALIES INCLUDING THOSE IN REFS B AND C WERE REVIEWED.

A. PLUS DENSITY (LIGHT STRUCK) AREAS IN FRAMES 69, 70 AND 72 OF PASS D53 OF THE FORWARD-LOOKING RECORD (INST 197).

CAUSE: INTENSE MOMENTARY LIGHT WAS OBSERVED DURING UNSPOOLING OPERATION AT [redacted] THE FLASH OF LIGHT WAS PROBABLY THE RESULT OF AN ELECTRO-STATIC DISCHARGE BETWEEN FILM SURFACES AT THE POINT ON THE MASTER CAMERA TAKE-UP SPOOL WHERE THE OUTER FILM WRAP IS SEPARATED FROM THE ROLL. 25X1

CAUSE: UNKNOWN

ACTION: NONE REQUIRED. BECAUSE OF THE UNUSUAL NATURE OF THIS DISCHARGE AND BECAUSE SUCH PHENOMENOM HAS NEVER PREVIOUSLY BEEN OBSERVED, NO ACTION IS INDICATED. [redacted] IS CONSTANTLY COGNIZANT OF UNSPOOLING PROCEDURES TOWARD ELIMINATION OF STATIC PROBLEMS. 25X1

B. INTERMITTENT MINUS DENSITY STREAK UP TO ONE QUARTER INCH WIDE ON THE MASTER MATERIAL. THIS STREAK APPEARS TO FOLLOW THE FIELD FLATTENER.

CAUSE: THIS MINUS DENSITY APPEARED TO BE CAUSED BY A FOREIGN PARTICLE/PARTICLES BETWEEN THE FIFTH AND SIXTH ELEMENT (FRONT SURFACE); BECAUSE OF THE CHARACTERISTIC DIAGONAL

TRACE, THE PARTICLE MUST BE ATTACHED TO, BUT NOT NECESSARY ON THE SURFACE OF, THE FIELD FLATTENER. THIS PARTICLE WAS PROBABLY LOOSELY ATTACHED RESULTING IN THE INTERMITTENTANCY OF THE STREAK. THIS STREAK WAS NOT PRESENT ON EVERY FRAME. THE MINUS DENSITY STREAK WAS NOT PRESENT DURING FINAL PRE-FLIGHT TESTING.

ACTION: SEE COMMENTS.

C. SIMILAR MINUS DENSITY STREAK AS DESCRIBED IN ITEM B IS PRESENT ON THE SLAVE MATERIAL.

CAUSE: THE MINUS DENSITY STREAKS THAT APPEARED ON THE SLAVE MATERIAL ARE SIMILAR TO THOSE ON THE MASTER FILM. THE SLAVE MINUS DENSITY STREAKS WERE NARROW, APPROXIMATELY ONE SIXTEENTH TO ONE EIGHT OF AN INCH WIDE, AND GENERALLY IN GROUPS OF TWO OR THREE. THE DIAGONAL TRACK WAS OBVIOUS WHICH PLACES THE CAUSE IN THE FIELD FLATTENER AREA. THIS APPEARS TO BE THE RESULT OF EMULSION OR DIRT PARTICLES ON THE FRONT SURFACE OF THE SIXTH ELEMENT. AS IN THE MASTER INSTRUMENT, THIS CONDITION WAS NOT PRESENT AT THE START OF THE MISSION.

ACTION: SEE COMMENTS.

D. SMALL AREAS OF SMEARED IMAGERY APPEARED IN THE TAKE-UP END OF THE MASTER MATERIAL. THESE AREAS ARE APPROXIMATELY ONE QUARTER OF AN INCH WIDE, EXTEND ACROSS THE WIDTH OF THE FORMAT. SOME OF THE SMEARED IMAGERY IS CONFINED TO MINUS DENSITY BANDING.

CAUSE: THIS ANOMALY APPEARS TO BE CAUSED BY AN OB-

STRUCTION TO THE FIELD FLATTENER TRAVEL. THIS COULD CAUSE A DEFLECTION OF THE LENS CONE AND/OR LENS PERPENDICULAR TO SCAN DIRECTION RESULTING IN SMEARING OF THE IMAGE IN THE IMC DIRECTION.

ACTION: NONE REQUIRED.

E. BANDING IS OCCASIONALLY PRESENT ON SOME FRAMES NEAR THE TAKE-UP END OF THE SLAVE MATERIAL.

CAUSE: BANDING IS CHARACTERISTIC OF AN INTERLOCKING SYSTEM. IN THE PAST, BANDING HAS BEEN ASSOCIATED WITH VERY SLOW CYCLE RATES NORMALLY NOT EMPLOYED IN FLIGHT.

ACTION: GROUND TESTS AT BIRD FACILITY WILL BE EXTENDED TO INCLUDE FOGGED FORMAT OPERATION AT THREE SEC PER CYCLE (MONITORS: [redacted]

25X1

F. A TWO PI SPACED PLUS DENSITY SPOT APPROXIMATELY 1/64 INCH IN DIAMETER OCCURRED IN THE SLAVE CAMERA (197) FILM THROUGHOUT MISSION 1040-1 AND 1040-2.

CAUSE: A HIGH SPOT CREATED BY A FOREIGN PARTICLE ON THE INPUT METERING ROLLER.

ACTION: NONE REQUIRED.

G. SEVERAL MINUTE MINUS DENSITY SPOTS ARE PRESENT ON ALL FRAMES OF D78 INDEX PHOTOGRAPHY.

CAUSE: FOREIGN PARTICLES PRESENT ON THE RESEAU.

ACTION: SEE COMMENTS.

H. ONE 1/64 INCH PLUS DENSITY SPOT PRESENT ON EACH FRAME OF D78 INDEX PHOTOGRAPHY. SPOT IS LOCATED OUTSIDE THE ACTIVE

FORMAT NEAR THE RESEAU NUMBER.

CAUSE: PLUS DENSITY SPOT CORRESPONDS TO HOLE IN THE MIRRORED SURFACE OF THE RESEAU.

ACTION: NONE REQUIRED.

I. EDGE FOG IS PRESENT ALONG BOTH EDGES OF D92 STELLAR FILM THROUGHOUT MISSION 1040-2.

CAUSE: UNKNOWN

ACTION: UNDER CONTINUED INVESTIGATION.

J. INTERMITTENT EDGE MARKS EXTENDING APPROXIMATELY 1/8 INCH INTO MISSION 1040-2 STELLAR FILM ON THE CORRELATION LAMP EDGE. MARK DOES NOT AFFECT STELLAR IMAGERY.

CAUSE: MARK APPEARS TO BE CAUSED BY LIQUID RUN DOWN.

ACTION: UNDER INVESTIGATION (MONITOR: [redacted] 25X1

5. CHARACTERISTIC ANOMALIES

THERE ARE CERTAIN ANOMALIES CHARACTERISTIC OF THE CORONA SYSTEM. WHILE THESE ITEMS WARRANT ATTENTION TO PREVENT FURTHER DEGRADATION, IT IS NOT FELT SPECIFIC ACTION ITEMS SHOULD BE ASSIGNED. A SUMMARY OF THESE ITEMS AND THE DEGREE OF DEGRADATION IS PRESENT BELOW.

A. RAIL SCRATCHES ARE CONTINUOUS THROUGHOUT THE MISSION. THEIR SEVERITY IS CONSIDERED MINOR AND ARE COMPARABLE TO PAST SYSTEMS.

B. MINOR NEWTON RINGS ARE PRESENT ON INDEX PHOTOGRAPHY OVER AREAS OF LOW CONTRAST.

6. COMMENTS

A. ANOMALY ITEMS B, C AND G COVERED IN THIS REPORT APPEAR TO BE CAUSED BY SOME FORM OF FOREIGN PARTICLES. IT IS RECOMMENDED THAT ALL ASSOCIATES REVIEW AND REINVESTIGATE STRICT ADHERENCE TO CLEANLINESS PROCEDURES.

B. ANALYSIS OF THE INDEX PHOTOGRAPHY PROVIDES THE FOLLOWING INFORMATION:

1040-1

TOTAL INDEX FRAMES - 439

TOTAL CLEAR FRAMES - 105 (24 PERCENT)

1040-2

TOTAL INDEX FRAMES - 498

TOTAL CLEAR FRAMES - 122 (25 PERCENT)

T O P S E C R E T

-END OF MESSAGE-